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AMENDMENTS TO THE CLAIMS

Kindly amend the claims as follows:

1. (currently amended) A system for automatic defect classification comprising:

computer-implemented means for applying a plurality of ~~binary~~ class-versus-class rules to a defect image, wherein any of said ~~binary~~ rules is operative to classify said defect image to one class of a class pair taken from a plurality of class pairs, and wherein any of said classes are associated with at least two of said rules, each rule pairing said class with a different other one of said classes; and

computer-implemented means for determining to which of said classes said defect image is classified the greatest number of times subsequent to the application of said ~~binary~~ rules.

2. (currently amended) A system according to claim 1 and further comprising computer-implemented means for automatically generating said ~~binary~~ rules.

3. (currently amended) A system according to claim 2 and further comprising a learning set having a plurality of said defect images, wherein each of said objects in said learning set is pre-classified as belonging to one of said classes, and wherein said means for automatically generating is operative to generate said ~~binary~~ rules using said learning set.

4. (original) A system according to claim 2 wherein said means for automatically generating is operative to generate using supervised learning.

5. (currently amended) A system according to claim 1 wherein:

each of said ~~binary~~ rules includes a first part and a second part,

said means for determining is operative to calculate using said first part a degree of belonging of said defect image to one of said classes in said class pair,

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said means for determining is operative to calculate using said second part a degree of belonging of said defect image to the other of said classes in said class pair, and

said means for applying is operative to select one of said classes in said class pairs to which said degree of belonging of said defect image is greater.

6. (previously presented) A system according to claim 5 wherein each of said parts comprises at least one fuzzy logic formula including at least one named predicate related to a numerical characteristic of one of said defect images, and wherein said means for determining is operative to calculate said degrees of belonging using said fuzzy-logic formulae.

7. (cancelled)

8. (previously presented) A system according to claim 1 wherein said defect images are semiconductor defect images and wherein said classes describe defect classes for application in semiconductor production.

9. (currently amended) A method for automatic defect classification comprising:

applying a plurality of ~~binary~~ class-versus-class rules to ~~an~~ a defect image, wherein any of said ~~binary~~ rules is operative to classify said defect image to one class of a class pair taken from a plurality of class pairs, and wherein any of said classes are associated with at least two of said rules, each rule pairing said class with a different other one of said classes; and

determining to which of said classes said defect image is classified the greatest number of times subsequent to the application of said ~~binary~~ rules.

10. (currently amended) A method according to claim 9 and further comprising:

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pre-classifying a plurality of defect images in a learning set as belonging to one of said classes; and

automatically generating said ~~binary~~ rules using said learning set, wherein any of said ~~binary~~ rules of any of said pairs of classes is generated using any of said defect images in said learning set that are pre-classified as belonging to said pair of classes.

11. (original) A method according to claim 10 wherein said automatically generating step comprises generating using supervised learning.

12. (currently amended) A method according to claim 9 wherein:

said determining step comprises calculating a degree of belonging of said defect image to one of said classes in said class pair using a first part of each of said ~~binary~~ rules,

said determining step comprises calculating a degree of belonging of said defect image to the other of said classes in said class pair using a second part of each of said ~~binary~~ rules, and

said applying step comprises selecting one of said classes in said class pairs to which said degree of belonging of said defect image is greater.

13. (previously presented) A method according to claim 12 wherein said determining step comprises calculating said degrees of belonging using a fuzzy-logic formula included in each of said parts and including at least one named predicate related to a numerical characteristic of one of said defect images.

14. (currently amended) A computer-implementable program embodied on a computer-readable medium, the computer program comprising:

a first code segment operative to apply a plurality of ~~binary~~ class-versus-class rules to a defect image, wherein any of said ~~binary~~ rules is operative to classify said defect image to one of a pair of a plurality of classes, and wherein any of said classes are

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associated with at least two of said rules, each rule pairing said class with a different other one of said classes; and

a second code segment operative to determine to which of said classes said defect image is classified the greatest number of times subsequent to the application of said binary rules.